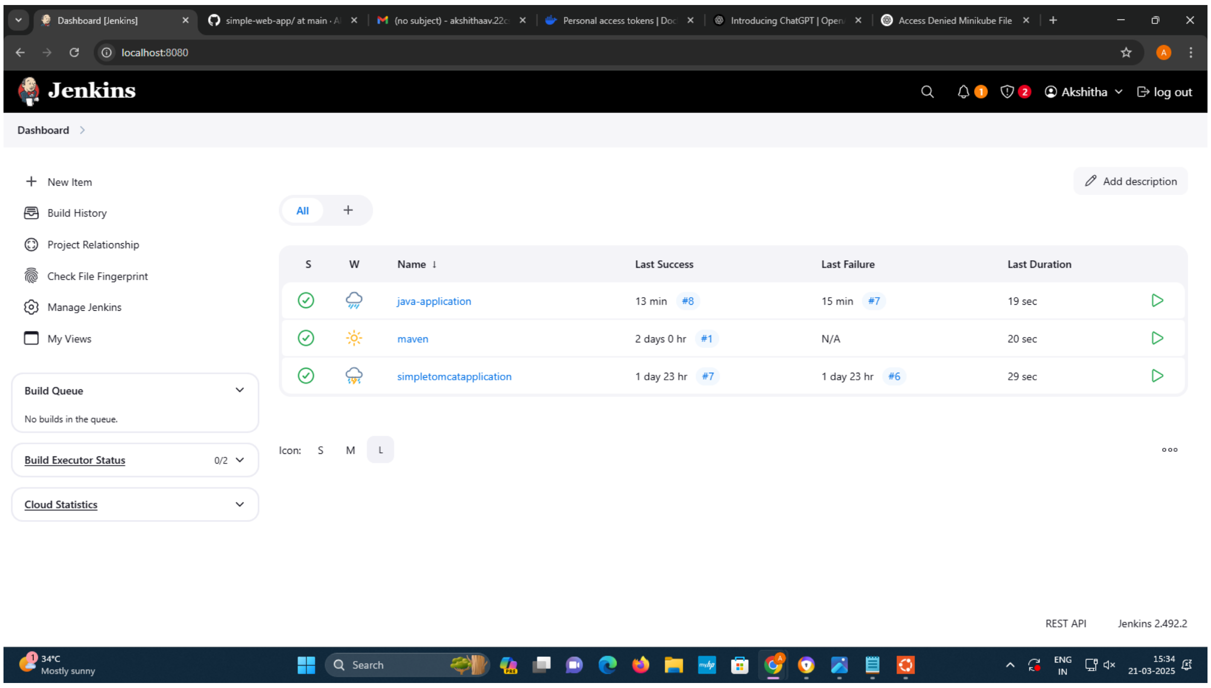
FINAL PROJECT

DAY-06

JAVA-APPLICATION DEPLOYMENT IN MINIKUBE

CREATION OF A PIPELINE PROJECT NAMED “java-application”



Dashboard

S	W	Name ↓	Last Success	Last Failure	Last Duration
✓		java-application	13 min #8	15 min #7	19 sec
✓		maven	2 days 0 hr #1	N/A	20 sec
✓		simpletomcatapplication	1 day 23 hr #7	1 day 23 hr #6	29 sec

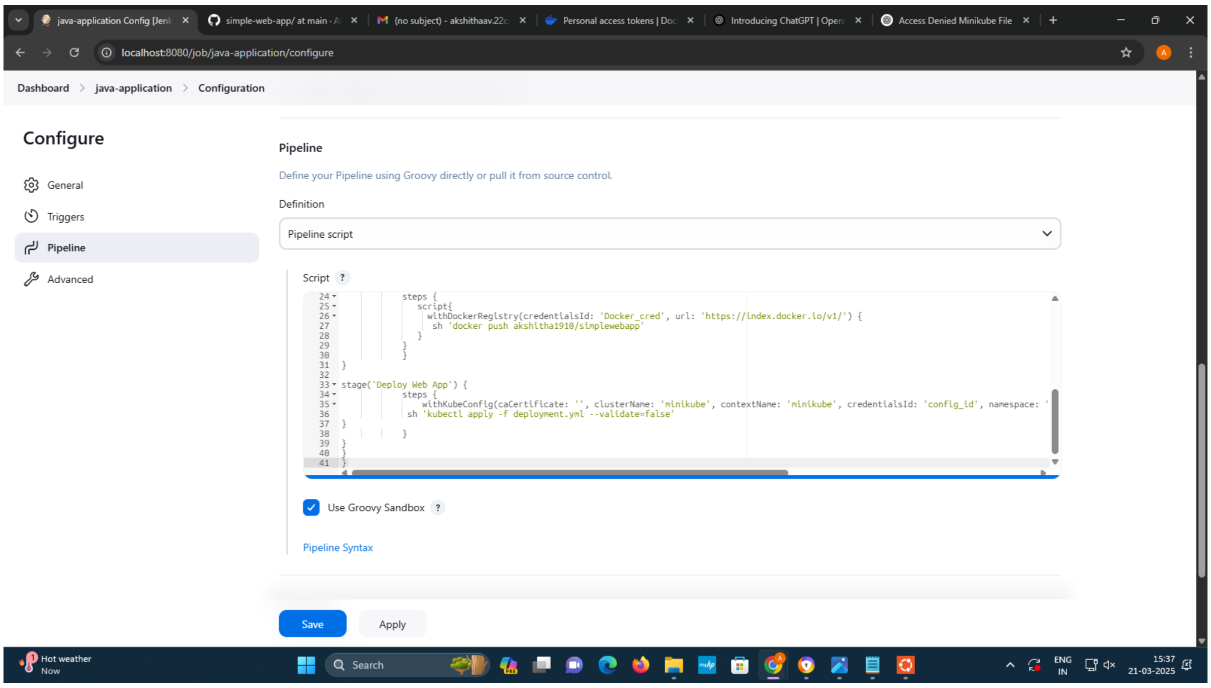
Build Queue

No builds in the queue.

Build Executor Status 0/2

Jenkins 2.492.2

PIPELINE SCRIPT



Dashboard > java-application > Configuration

Pipeline

Define your Pipeline using Groovy directly or pull it from source control.

Definition: Pipeline script

Script

```
                steps {
                   script{
                     withDockerRegistry(credentialsId: 'Docker_cred', url: 'https://index.docker.io/v1/') {
                      sh 'docker push akshitha1910/simplewebapp'
                   }
                }
                }
}

stage('Deploy Web App') {
                steps {
                    withKubeConfig(caCertificate: '', clusterName: 'minikube', contextName: 'minikube', credentialsId: 'config_id', namespace: '
                 sh 'kubectl apply -f deployment.yml --validate=false'
}
                }
}
}
}
```

☑ Use Groovy Sandbox

PIPELINE SCRIPT CODE

```
pipeline {
   agent any

   stages {
      stage('scm') {
         steps {
      git branch: 'main', url: 'https://github.com/Akshi1910/simple-web-app.git'
         }
      }
      stage('build') {
         steps {
           sh "mvn clean"
           sh "mvn install"
}
}
stage('build to images') {
         steps {
           script{
             sh 'docker build -t akshitha1910/simplewebapp .'
           }
   }
}
stage('push to hub') {
         steps {
           script{
             withDockerRegistry(credentialsId: 'Docker_cred', url: 'https://index.docker.io/v1/') {
             sh 'docker push akshitha1910/simplewebapp'
           }
         }
         }
}

stage('Deploy Web App') {
         steps {
            withKubeConfig(caCertificate: '', clusterName: 'minikube', contextName: 'minikube',
credentialsId: 'config_id', namespace: '', restrictKubeConfigAccess: false, serverUrl:
'https://192.168.39.226:8443') {
         sh 'kubectl apply -f deployment.yml --validate=false'
}
         }
}
}
}
```

DEPLOYMENT FILE

deployment.yml

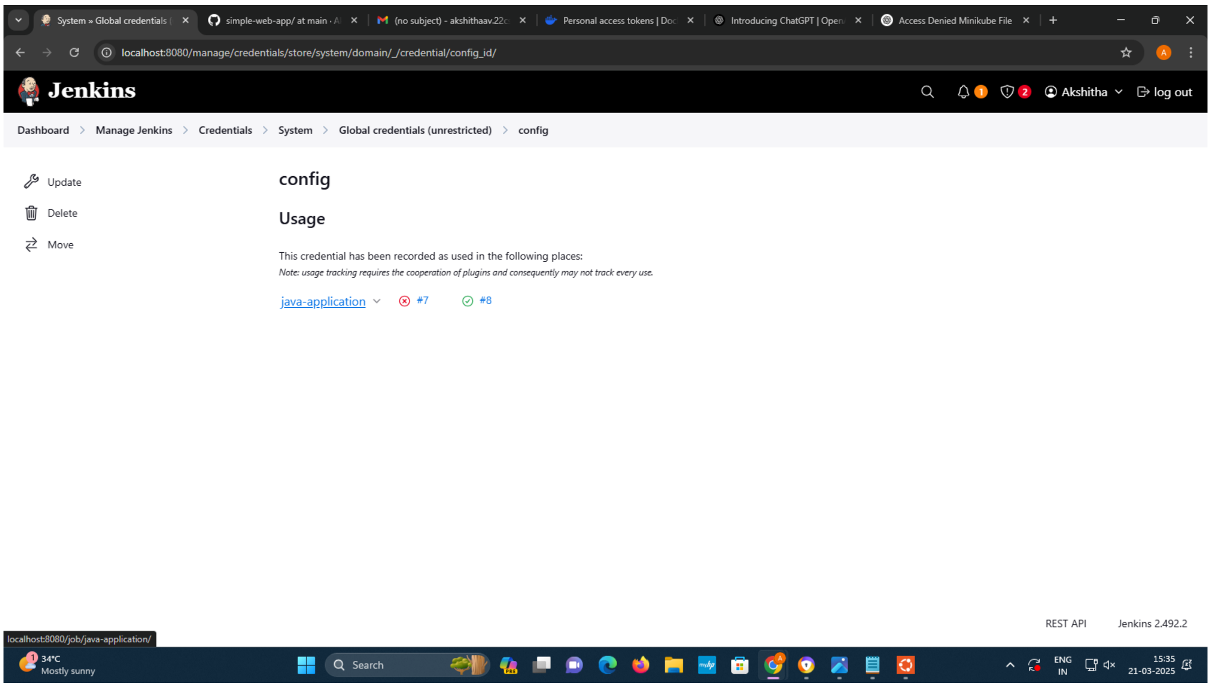
```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: webnginx2
  labels:
    name: webnginx2
spec:
  replicas: 1
  selector:
    matchLabels:
      apptype: web-backend
  strategy:
    type: RollingUpdate
  template:
    metadata:
      labels:
        apptype: web-backend
    spec:
      containers:
      - name: webnginx2
        image: akshitha1910/simplewebapp:latest
        ports:
        - containerPort: 7070
---
```

```
apiVersion: v1
kind: Service
metadata:
  name: my-service
  labels:
    app: my-service
    type: backend-app
spec:
  type: NodePort
  ports:
   - targetPort: 8080
     port: 7070
     nodePort: 30002
  selector:
    apptype: web-backend
```

deployment.yml file should be present in the project:

gitlink: https://github.com/Akshi1910/simple-web-app

CREATION OF CREDENTIALS



localhost:8080/manage/credentials/store/system/domain/_/credential/config_id/

Dashboard > Manage Jenkins > Credentials > System > Global credentials (unrestricted) > config

config

Usage

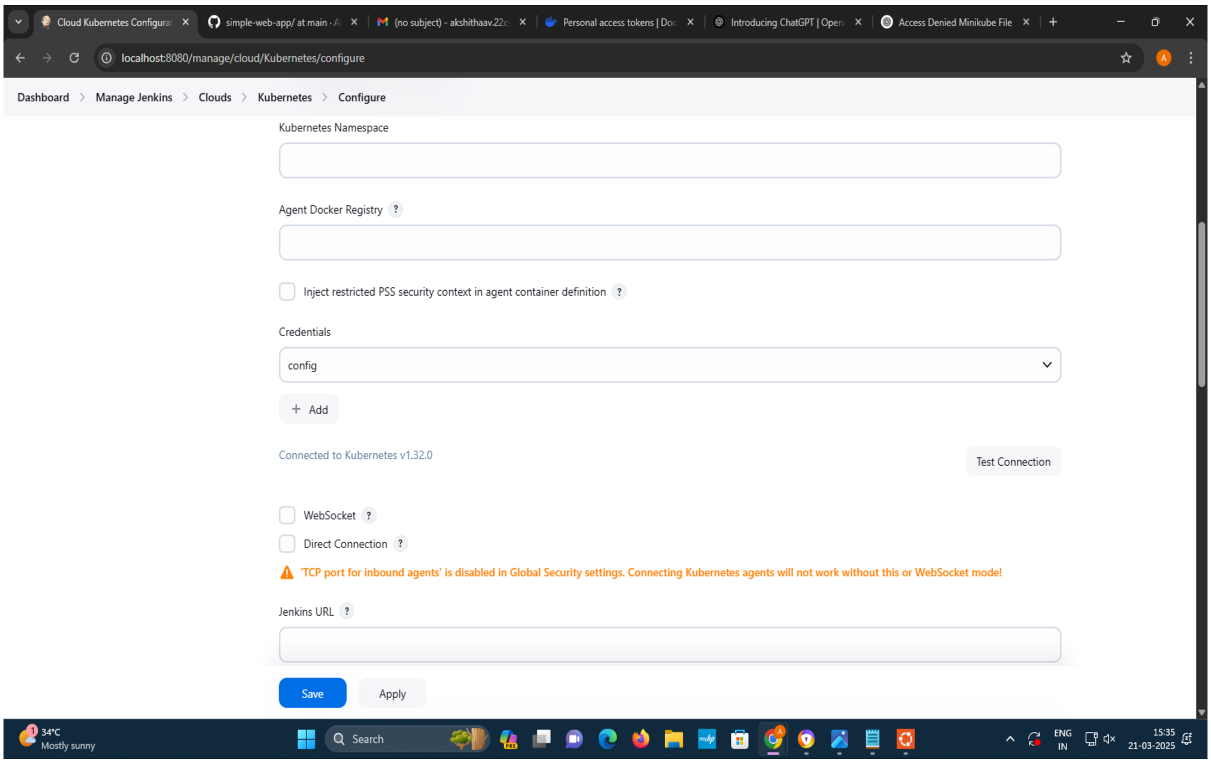
This credential has been recorded as used in the following places:

Note: usage tracking requires the cooperation of plugins and consequently may not track every use.

java-application #7 #8

System » Global credentials
simple-web-app/ at main
(no subject) - akshithaav.22
Personal access tokens | Doc
Introducing ChatGPT | Open
Access Denied Minikube File
Jenkins
Akshitha
log out
Update
Delete
Move
REST API
Jenkins 2.492.2
localhost:8080/job/java-application/
34°C
Mostly sunny
Search
ENG
IN
15:35
21-03-2025

CONNECTING TO KUBERNETES



localhost:8080/manage/cloud/Kubernetes/configure

Dashboard > Manage Jenkins > Clouds > Kubernetes > Configure

Kubernetes Namespace

Agent Docker Registry

Inject restricted PSS security context in agent container definition

Credentials: config

Connected to Kubernetes v1.32.0

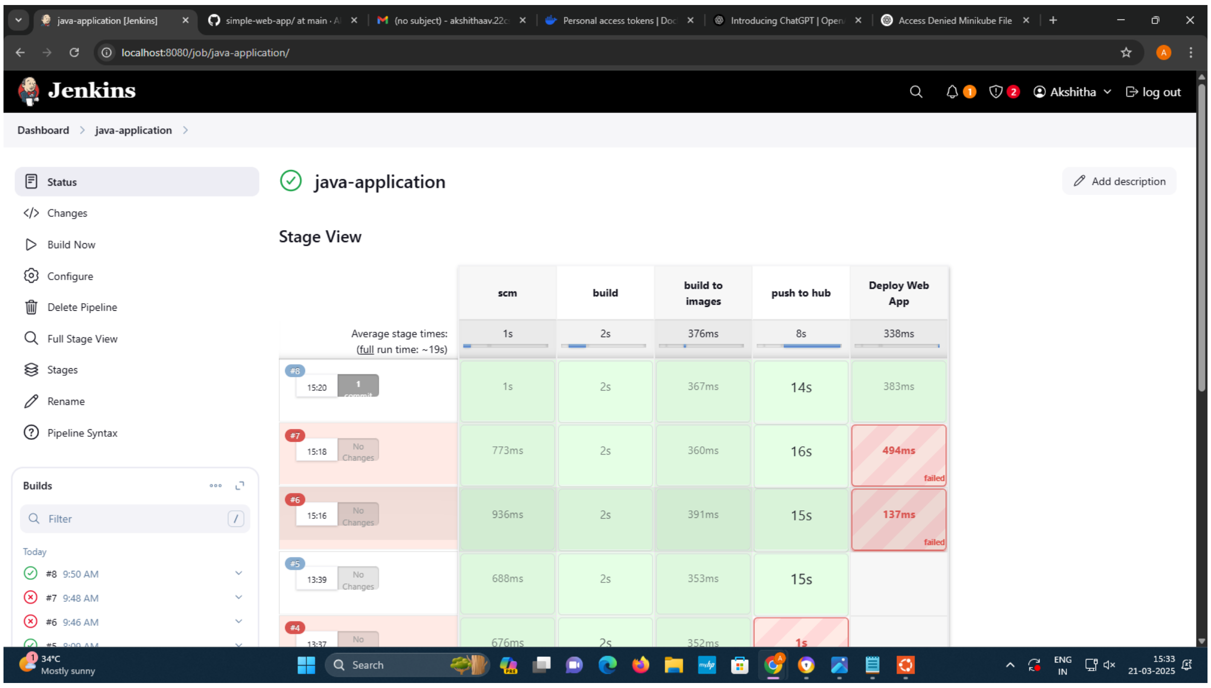
WebSocket

Direct Connection

'TCP port for inbound agents' is disabled in Global Security settings. Connecting Kubernetes agents will not work without this or WebSocket mode!

Jenkins URL

STAGE VIEW OF BUILD



localhost:8080/job/java-application/

Dashboard > java-application

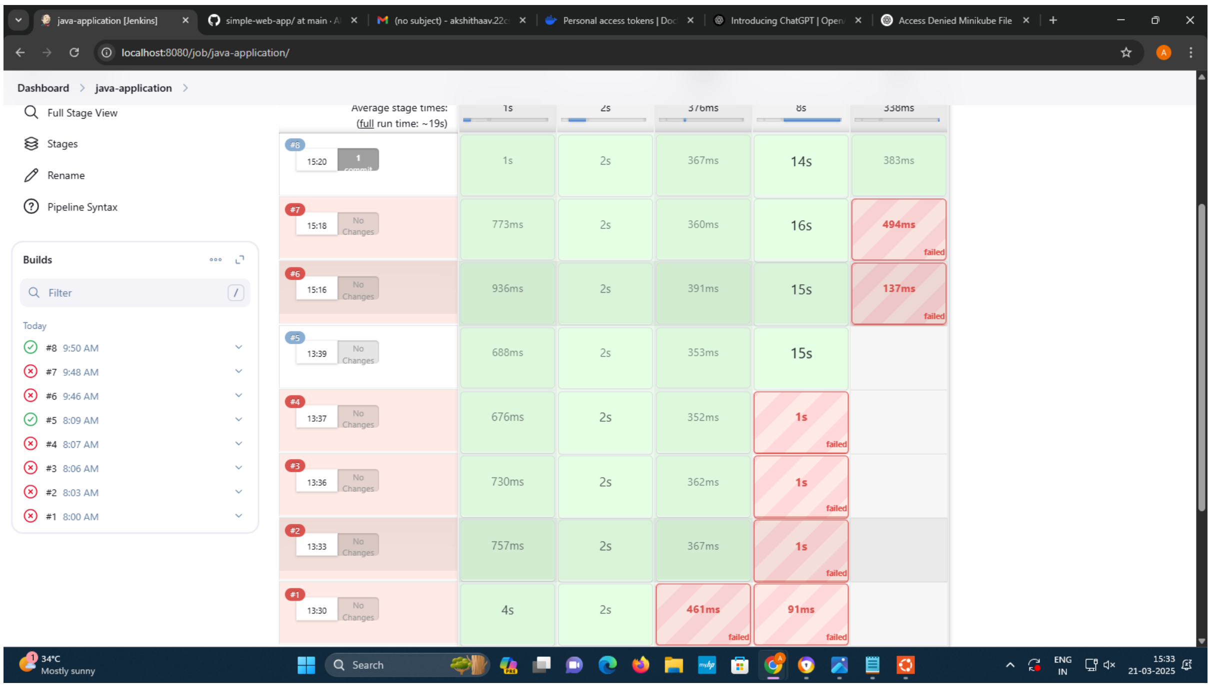
java-application

Stage View

	scm	build	build to images	push to hub	Deploy Web App
Average stage times: (full run time: ~19s)	1s	2s	376ms	8s	338ms
#8 15:20 1 commit	1s	2s	367ms	14s	383ms
#7 15:18 No Changes	773ms	2s	360ms	16s	494ms failed
#6 15:16 No Changes	936ms	2s	391ms	15s	137ms failed
#5 13:39 No Changes	688ms	2s	353ms	15s	
#4 13:37 No	676ms	2s	352ms	1s	

Builds

Today
- ✓ #8 9:50 AM
- ✗ #7 9:48 AM
- ✗ #6 9:46 AM



localhost:8080/job/java-application/

Dashboard > java-application >

- Full Stage View
- Stages
- Rename
- Pipeline Syntax

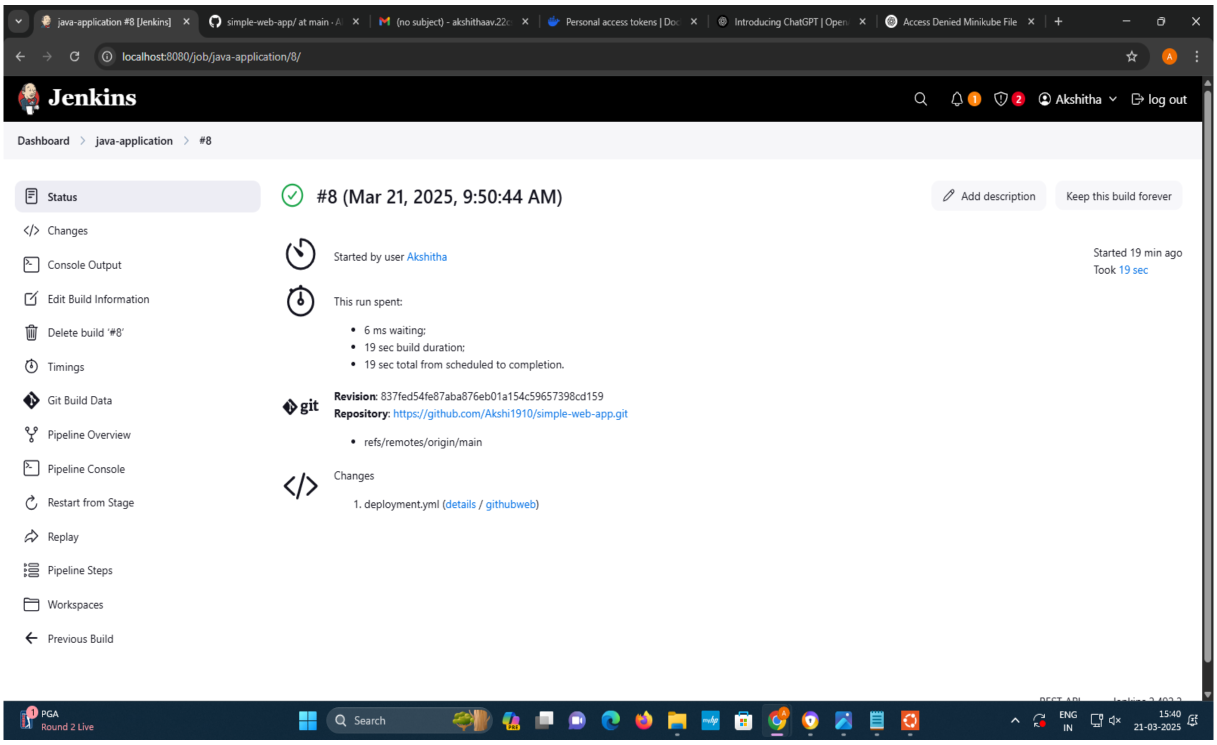
Builds

Today

- ✓ #8 9:50 AM
- ✗ #7 9:48 AM
- ✗ #6 9:46 AM
- ✓ #5 8:09 AM
- ✗ #4 8:07 AM
- ✗ #3 8:06 AM
- ✗ #2 8:03 AM
- ✗ #1 8:00 AM

Average stage times: (full run time: ~19s)	1s	2s	376ms	8s	338ms
#8 15:20 1 commit	1s	2s	367ms	14s	383ms
#7 15:18 No Changes	773ms	2s	360ms	16s	494ms failed
#6 15:16 No Changes	936ms	2s	391ms	15s	137ms failed
#5 13:39 No Changes	688ms	2s	353ms	15s	
#4 13:37 No Changes	676ms	2s	352ms	1s failed	
#3 13:36 No Changes	730ms	2s	362ms	1s failed	
#2 13:33 No Changes	757ms	2s	367ms	1s failed	
#1 13:30 No Changes	4s	2s	461ms failed	91ms failed	

BUILD SUCCESS



localhost:8080/job/java-application/8/

Jenkins

Dashboard > java-application > #8

- Status
- Changes
- Console Output
- Edit Build Information
- Delete build '#8'
- Timings
- Git Build Data
- Pipeline Overview
- Pipeline Console
- Restart from Stage
- Replay
- Pipeline Steps
- Workspaces
- Previous Build

✓ #8 (Mar 21, 2025, 9:50:44 AM)

Add description | Keep this build forever

Started by user Akshitha

Started 19 min ago
Took 19 sec

This run spent:

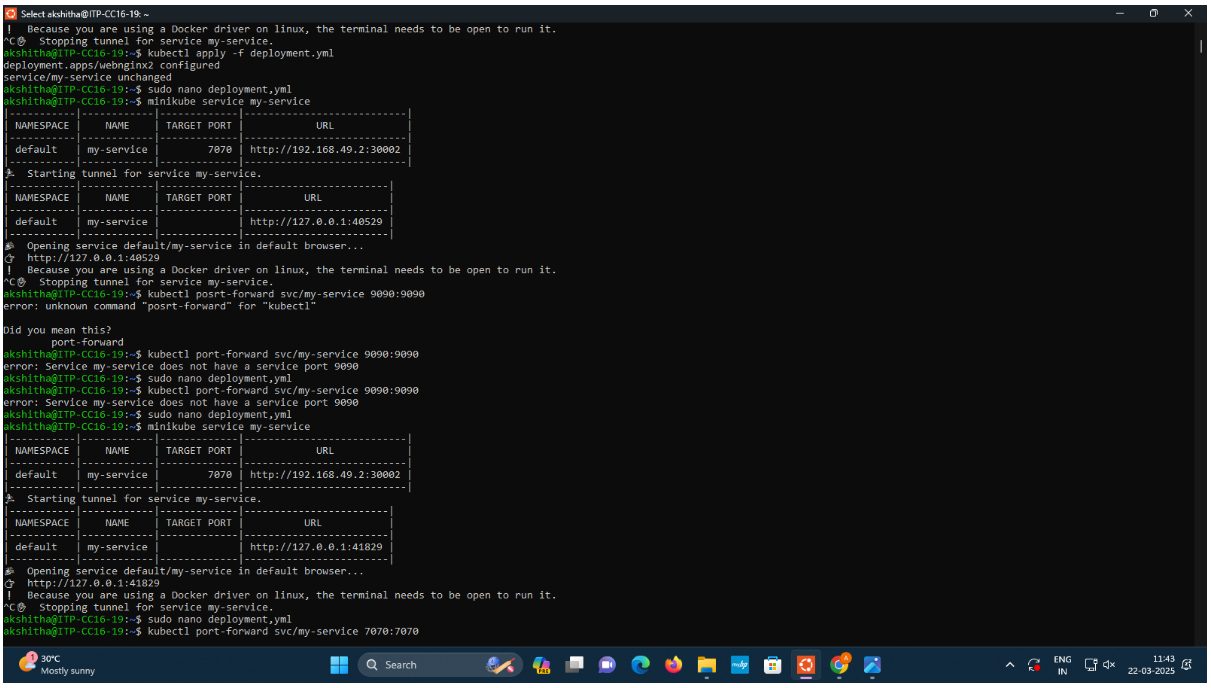
- 6 ms waiting;
- 19 sec build duration;
- 19 sec total from scheduled to completion.

Revision: 837fed54fe87aba876eb01a154c59657398cd159
Repository: https://github.com/Akshi1910/simple-web-app.git

- refs/remotes/origin/main

Changes

1. deployment.yml (details / githubweb)



```
❗  Because you are using a Docker driver on linux, the terminal needs to be open to run it.
^C✋  Stopping tunnel for service my-service.
akshitha@ITP-CC16-19:~$ kubectl apply -f deployment.yml
deployment.apps/webnginx2 configured
service/my-service unchanged
akshitha@ITP-CC16-19:~$ sudo nano deployment,yml
akshitha@ITP-CC16-19:~$ minikube service my-service
|-----------|------------|-------------|---------------------------|
| NAMESPACE |    NAME    | TARGET PORT |            URL            |
|-----------|------------|-------------|---------------------------|
| default   | my-service |        7070 | http://192.168.49.2:30002 |
|-----------|------------|-------------|---------------------------|
🏃  Starting tunnel for service my-service.
|-----------|------------|-------------|------------------------|
| NAMESPACE |    NAME    | TARGET PORT |          URL           |
|-----------|------------|-------------|------------------------|
| default   | my-service |             | http://127.0.0.1:40529 |
|-----------|------------|-------------|------------------------|
🎉  Opening service default/my-service in default browser...
👉  http://127.0.0.1:40529
❗  Because you are using a Docker driver on linux, the terminal needs to be open to run it.
^C✋  Stopping tunnel for service my-service.
akshitha@ITP-CC16-19:~$ kubectl posrt-forward svc/my-service 9090:9090
error: unknown command "posrt-forward" for "kubectl"

Did you mean this?
        port-forward
akshitha@ITP-CC16-19:~$ kubectl port-forward svc/my-service 9090:9090
error: Service my-service does not have a service port 9090
akshitha@ITP-CC16-19:~$ sudo nano deployment,yml
akshitha@ITP-CC16-19:~$ kubectl port-forward svc/my-service 9090:9090
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| NAMESPACE |    NAME    | TARGET PORT |            URL            |
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| default   | my-service |        7070 | http://192.168.49.2:30002 |
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|-----------|------------|-------------|------------------------|
| NAMESPACE |    NAME    | TARGET PORT |          URL           |
|-----------|------------|-------------|------------------------|
| default   | my-service |             | http://127.0.0.1:41829 |
|-----------|------------|-------------|------------------------|
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^C✋  Stopping tunnel for service my-service.
akshitha@ITP-CC16-19:~$ sudo nano deployment,yml
akshitha@ITP-CC16-19:~$ kubectl port-forward svc/my-service 7070:7070
```

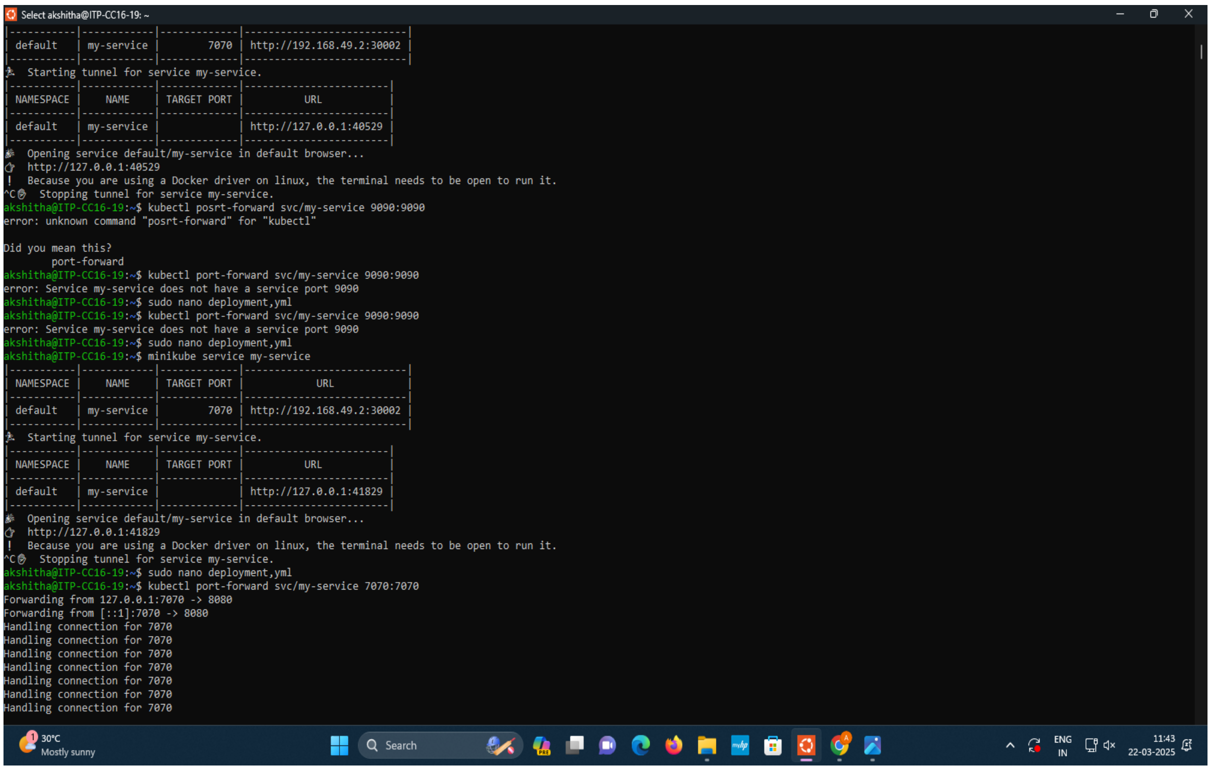

```
|-----------|------------|-------------|---------------------------|
| default   | my-service |        7070 | http://192.168.49.2:30002 |
|-----------|------------|-------------|---------------------------|
🏃  Starting tunnel for service my-service.
|-----------|------------|-------------|------------------------|
| NAMESPACE |    NAME    | TARGET PORT |          URL           |
|-----------|------------|-------------|------------------------|
| default   | my-service |             | http://127.0.0.1:40529 |
|-----------|------------|-------------|------------------------|
🎉  Opening service default/my-service in default browser...
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|-----------|------------|-------------|---------------------------|
| NAMESPACE |    NAME    | TARGET PORT |            URL            |
|-----------|------------|-------------|---------------------------|
| default   | my-service |        7070 | http://192.168.49.2:30002 |
|-----------|------------|-------------|---------------------------|
🏃  Starting tunnel for service my-service.
|-----------|------------|-------------|------------------------|
| NAMESPACE |    NAME    | TARGET PORT |          URL           |
|-----------|------------|-------------|------------------------|
| default   | my-service |             | http://127.0.0.1:41829 |
|-----------|------------|-------------|------------------------|
🎉  Opening service default/my-service in default browser...
👉  http://127.0.0.1:41829
❗  Because you are using a Docker driver on linux, the terminal needs to be open to run it.
^C✋  Stopping tunnel for service my-service.
akshitha@ITP-CC16-19:~$ sudo nano deployment,yml
akshitha@ITP-CC16-19:~$ kubectl port-forward svc/my-service 7070:7070
Forwarding from 127.0.0.1:7070 -> 8080
Forwarding from [::1]:7070 -> 8080
Handling connection for 7070
Handling connection for 7070
Handling connection for 7070
Handling connection for 7070
Handling connection for 7070
Handling connection for 7070
Handling connection for 7070
```

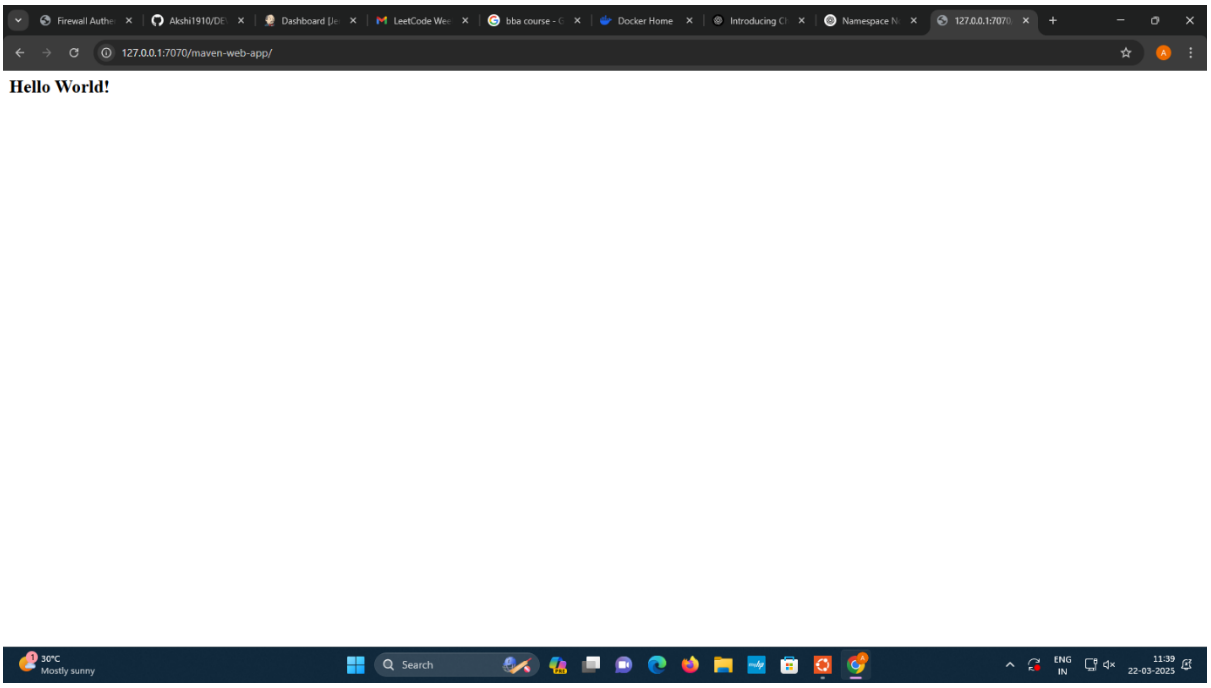
Firewall Authe
Akshi1910/DE
Dashboard [Je
LeetCode Wee
bba course - G
Docker Home
Introducing Ch
Namespace N
127.0.0.1:7070
127.0.0.1:7070/maven-web-app/
30°C
Mostly sunny
Search
ENG
IN
11:39
22-03-2025

Hello World!